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09/844,271	04/30/2001	Radhika Thekkath	MTEC007/00US	1047

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EXAMINER

KENDALL, CHUCK O

ART UNIT PAPER NUMBER

2192

DATE MAILED: 02/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/844,271

Applicant(s)

THEKKATH, RADHIKA

Examiner

Chuck O. Kendall

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/15/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/15/05 has been entered.

2. Claims 1 – 18 are pending in this Application.

#### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 16 – 18, claims transmitting the computer program code through a carrier wave which is not categorized as a known form of statutory matter, and hence is non statutory.

#### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 1 – 4, 6 – 10, 11 & 13 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ayers et al. USPN 6,353,924 (art of record) in view of Mann USPN 6,314,530 B1 (art of record).

Regarding claim 1, Ayers discloses executing a program that includes a plurality of instructions, said plurality of instructions including one or more user trace data write commands (6:50 – 53, see instrumentation code 304 records or writes out, also see 11:17 – 24, see events chosen by user), wherein a user trace data write command instructs a processor to write user trace data to a user trace data register, each said user trace data write command indicating a selection by a user of user defined trace data to be written into said user trace data register (4:10 – 13, shows block identifiers, which are part of the sequence information can be stored in a register, also see 5:1 – 3, for being selected by user);

wherein execution of said plurality of instructions result in tracing a subset of program execution attributes of interest to said user (11:18 – 23, see “The event is chosen by user and special instrumentation instructions are inserted to check for the user specified condition... Different events can be assigned to trigger different buffers”).

Although, Ayers doesn’t expressly disclose each said user trace write command being a standard write command without trace code information identifying the type of data to be traced and detecting a write to at least part of said user trace data register;

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and in response to said detected write, generating a trace record that includes at least part of the user trace data in said user trace data register, Ayers does mention that the instrumentation code is able to record or write out the trace information using the block identifiers and sequence information (Ayers, 6:50 – 53, see instrumentation code 304 records or writes out).

Mann discloses in an analogous art and similar configuration that the trace *access instruction* can be a write instruction (4:16 – 19) as well as utilizing the Eax register to store and retrieve data from the trace cache (23:65 – 24:18). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ayers and Mann because, it would provide the capability to trace on execution of an executable thread by providing to the processor an indication to trace on execution of an executable thread (Mann, 4:17 – 21).

Regarding claim 2, the method of claim 1, further comprising a trace capture component (Ayers, 6:50 – 53, see instrumentation code 304 records or writes out).

Regarding claim 3, the method of claim 2, identifying said outputted trace data as containing user trace data (Ayers, FIG. 5, 219 and all associated text).

Regarding claim 4, the method of claim 1, wherein said user trace data register includes a general processor register value (Ayers, 4:12 – 14, see register value).

Regarding claim 6, the method of claim 1, wherein said user trace data register includes debug-related information that is observable during program execution (Ayers, 6:58 – 60, see presenter, also refer to 2:12 – 15, for facilitating debugging by user).

In regard to Claim 7, the method of claim 1, wherein said user trace write command is included in said program prior to execution (Ayers, FIG. 4, 305 and all associated text).

Regarding claim 8, the system version of claim 1, which has already been addressed see rationale as discussed above in claim 1, and regarding the system see (Ayers, FIG. 4).

Regarding claims 9 – 11, 13 and 14, which are the systems versions of 2 – 4, 6 and 7, and which have already been addressed see rationale above as previously discussed.

Regarding claim 15, the computer program product version of claim 1, which has already been addressed see rationale as discussed above in claim 1, and regarding the product see (Ayers, 13: 49 – 16:10).

Regarding claim 16, Ayers discloses a method for enabling a computer to generate a tracing system, comprising:

transmitting computer-readable program code to a computer (13:47 – 50), said computer readable program code including:

computer-readable program code for causing a computer to describe a user trace data register that stores user trace data upon execution of a user trace data write command included among a plurality of instructions (FIG. 4, 319), said user trace data write command indicating a selection by a user of user-defined trace data to be written into said user trace data register, (4:10 – 13, shows block identifiers, which are part of the sequence information can be stored in a register, also see 5:1 – 3, for being selected by user), wherein execution of said plurality of instructions result in tracing a subset of program execution attributes of interest to said user (11:18 – 23, see “The event is chosen by user and special instrumentation instructions are inserted to check for the user specified condition...Different events can be assigned to trigger different buffers”).

Although, Ayers doesn't expressly disclose said user trace write command being a standard write command without trace code information identifying the type of data to be traced and computer-readable program code for causing a computer to describe a trace generation logic that detects a write to at least part of said user trace data register and generates a trace record that includes at least part of the user trace data in said user trace data register, Ayers does mention that the instrumentation code is able to record or write out the trace information using the block identifiers and sequence information (Ayers, 6:50 – 53, see instrumentation code 304 records or writes out).

Mann discloses in an analogous art and similar configuration that the trace access instruction can be a write instruction (4:16 – 19) as well as utilizing the Eax register to store and retrieve data from the trace cache (23:65 – 24:18). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ayers and Mann because, it would provide the capability to trace on execution of an executable thread by providing to the processor an indication of to trace on execution of an executable thread” (Mann, 4:17 – 21).

Regarding claim 18, which claims similarly as claim 1, see reasoning as previously discussed above.

7. Claims 5,12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ayers et al. (U.S. Patent Number 6,353,924) in view of Mann USPN 6,314,530 B1 as applied in claims 1, 8 and 16 and further in view of Shagam USPN 6,311,326.

Regarding claim 5, Ayers as modified by Mann discloses all the claimed limitations as applied in claim 1 above. Although, the combination of Ayers and Mann does not disclose, that the user trace data register includes a program variable value, Ayers does disclose that “Debuggers provide information on system state, such as program variable values at the halt point” (2:12 – 15) and further discloses that, “an instruction trace can also be presented to the user in source form to facilitate debugging by a user” (8:57 – 60). Shagam discloses an online debugging software which includes,



“defining trace point locations (addresses) and data and variables to be collected at those trace points in the software at a host machine” (1:52 – 55).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ayers and Mann with Shagam because, it would enable collecting data and variables at predefined trace points (Shagam, 1:57 – 60).

Regarding claim 12, the systems version of claim 5, which has already been addressed, see reasoning above.

Regarding claim 17, Ayers as modified by Mann discloses all the claimed limitations as applied in claim 16 above. The combination of Ayers and Mann doesn't expressly disclose, wherein computer-readable program code is transmitted to said computer over the Internet.

However, Shagam discloses in a similar configuration an online debugging system in which the target machine can be connected over the internet (4:54 – 55). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Ayers and Mann with Shagam because, it would enable the both the “ target and host computer to implement the steps of defining, in the host computer, trace point locations and variables to be collected by the software on the target machine” (Shagam, 2:32 – 35).

***Response to Arguments***

8. Argument (1), Applicant argues on page 2, first paragraph of his (11/15/05) response that AYERS relates to instrumentation of code, and that "AYERS does not relate to user-defined trace data", and does not show or suggest, "user trace write commands".

Response (1), In response to Applicant's assertions that the limitations as argued by Applicant in (1), are not taught by AYERS, Examiner would like to direct Applicant to 6:50 – 55 in AYERS. It is true that AYERS does discuss instrumentation of code however, AYERS also does teach user defined trace data. In 6:50 – 58, AYERS discloses that the instrumentation code records or writes out a sequence record 307, comprising sequence information (trace information) to produce the desired trace data 309. AYERS further discloses in 11:17 – 24, that the events are written out and displayed when an event is detected and these events are chosen by the user, hence Examiner believes this is equivalent to Applicant's user defined trace data. Further with regards to AYERS not teaching "user trace write commands", MANN is provided as a secondary reference to provide that functionality. Although, doesn't expressly disclose "a user write command", he does show that the instructions are written out or displayed as disclosed in 11:17 – 24. However MANN discloses that his trace access instruction can be a write instruction (i.e. write command) (4:16 – 19), hence Examiner believes that aspect of Applicant's invention is also being taught.

Argument (2), in the 4<sup>th</sup> paragraph of page 2, of Applicants response (11/15/05) Applicant argues that, nothing in AYERS suggests the desirability of combination with a reference such as MANN.

Response (2), Ayers is directed to back tracing through use of recorded sequence data see (Abstract) and presenting recorded trace data to a user 4:43 – 47, interactively see 11:17 – 24. AYERS doesn't explicitly discuss a user trace write command, but he is able to write data through selecting events, and hence suggests the use of a write command.

### **Conclusion**

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuck Kendall whose telephone number is 571-272-3698. The examiner can normally be reached on 10:00 am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ck.

Chuck Kendall 02/21/06